

ArchE: An SMW-based Architecture Repository | Larry Claman
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Introduction

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Speaker:

Larry Claman, Technology Architect at **Reed Elsevier Technology Services**

Problem at hand: Why we built ArchE

- Need for architecture repository with shared artifacts for re-use that can **manage relationships**

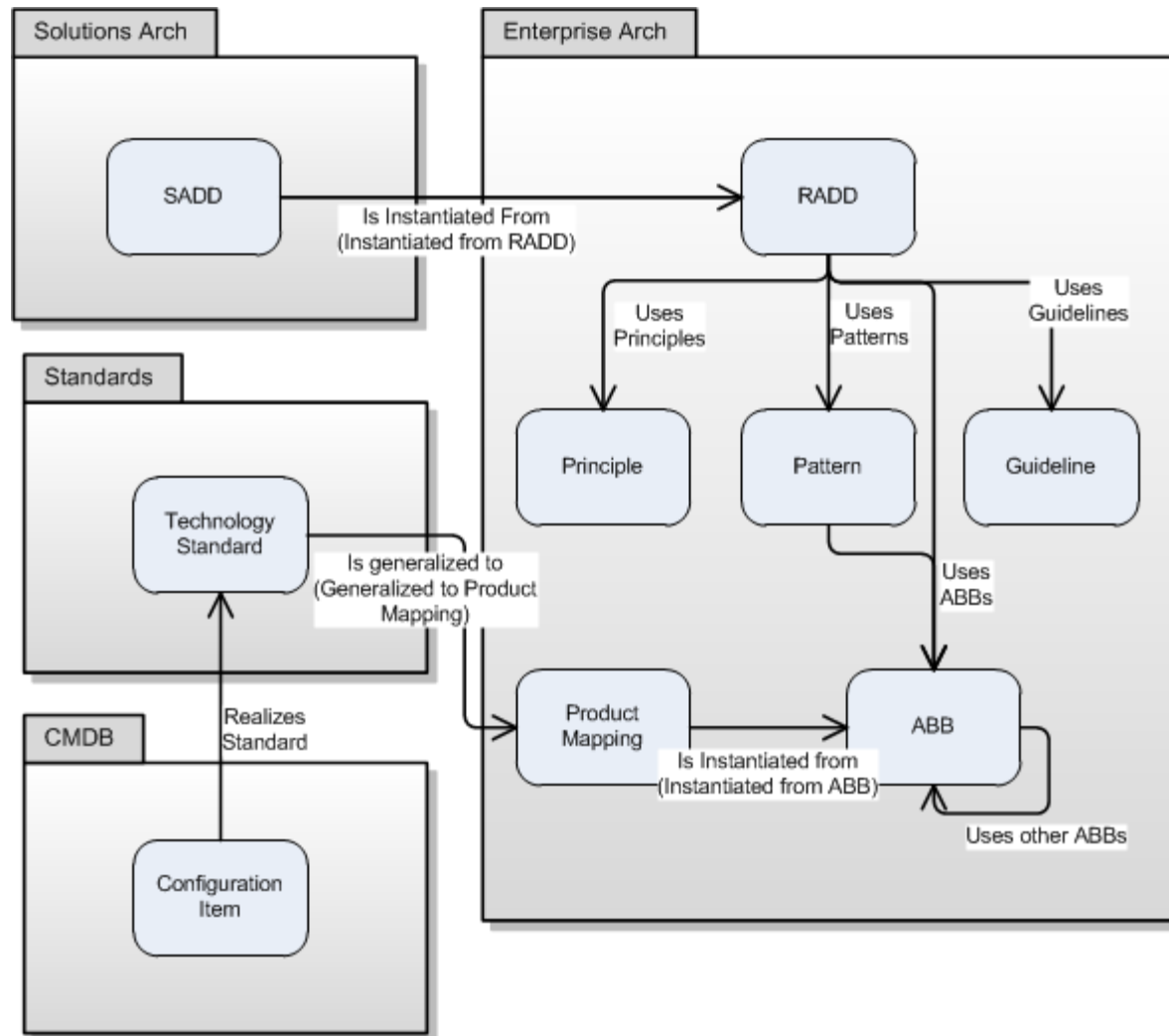
ADDs (*Architecture Definition Documents*)

└─> Patterns

└─> ABBs (*Architecture Building Blocks*)

- Large gap with commercial product offerings
 - Desire to start small and build up; most commercial products start large and make you conform
- Inspired by Sogetti's [DYA Infrastructure Repository](#)

Artifact Relationships



Our Solution

- SMW with:
 - Semantic Forms for meta data
 - Free Text for bulk of document text
- SMWPlus platform: Integrated WYSIWYG editor, faceted search
- Plus lots of extensions



In a year, we created 93 ADDs, 190 Patterns, 251 ABBs

Example: Cloud Reference Architecture

[Link](#)

Cloud Reference Architecture

[Edit](#)[More](#) ▼

Object Type: RADD	Graph		
Tech Domain	Platform		
Status	Work in Progress		
Milestone number			
Uses Patterns	Cloud - Private Cloud, Data Center Orchestration, Cloud - PaaS, Cloud - SaaS, Cloud - Amazon, Cloud - Multi Cloud, Cloud - Proof of Concept, Hybrid Internet Access, Data Center Extension, Web Ingress 2010 Pattern, Automated Provisioning/De-Provisioning User Credentials and Entitlements		
Uses ABBs			
Uses Principles			
Owner (Ref Architect)	Matt Lipinski		
Solution Architect		Review Date	
Description	Describes architectural and business considerations for leveraging public clouds vendors for solutions leveraging IAAS, PAAS and SAAS		

Relationships defined here

[Overview](#)[Requirements](#)[Architectural Approach and Decisions](#)[Technology Architecture](#)[Reference](#)[Other](#)

Document Purpose [edit](#)

The purpose of this document is to describe architectural and business considerations for leveraging public clouds vendors for solutions leveraging IAAS

Example: Cloud – Amazon Pattern

[Link](#)

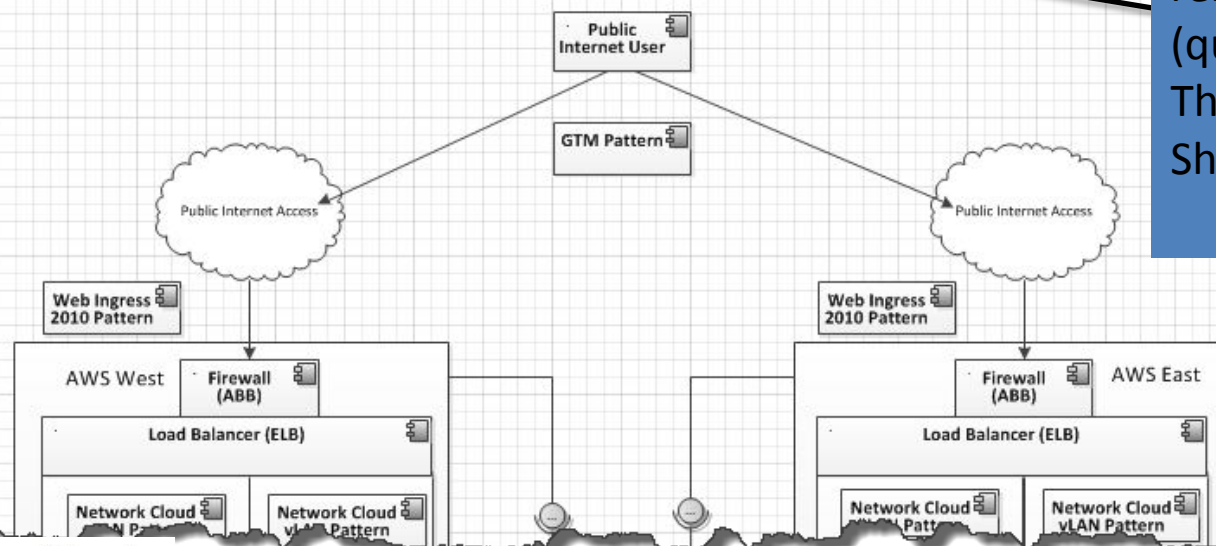
Cloud - Amazon

[Edit](#)

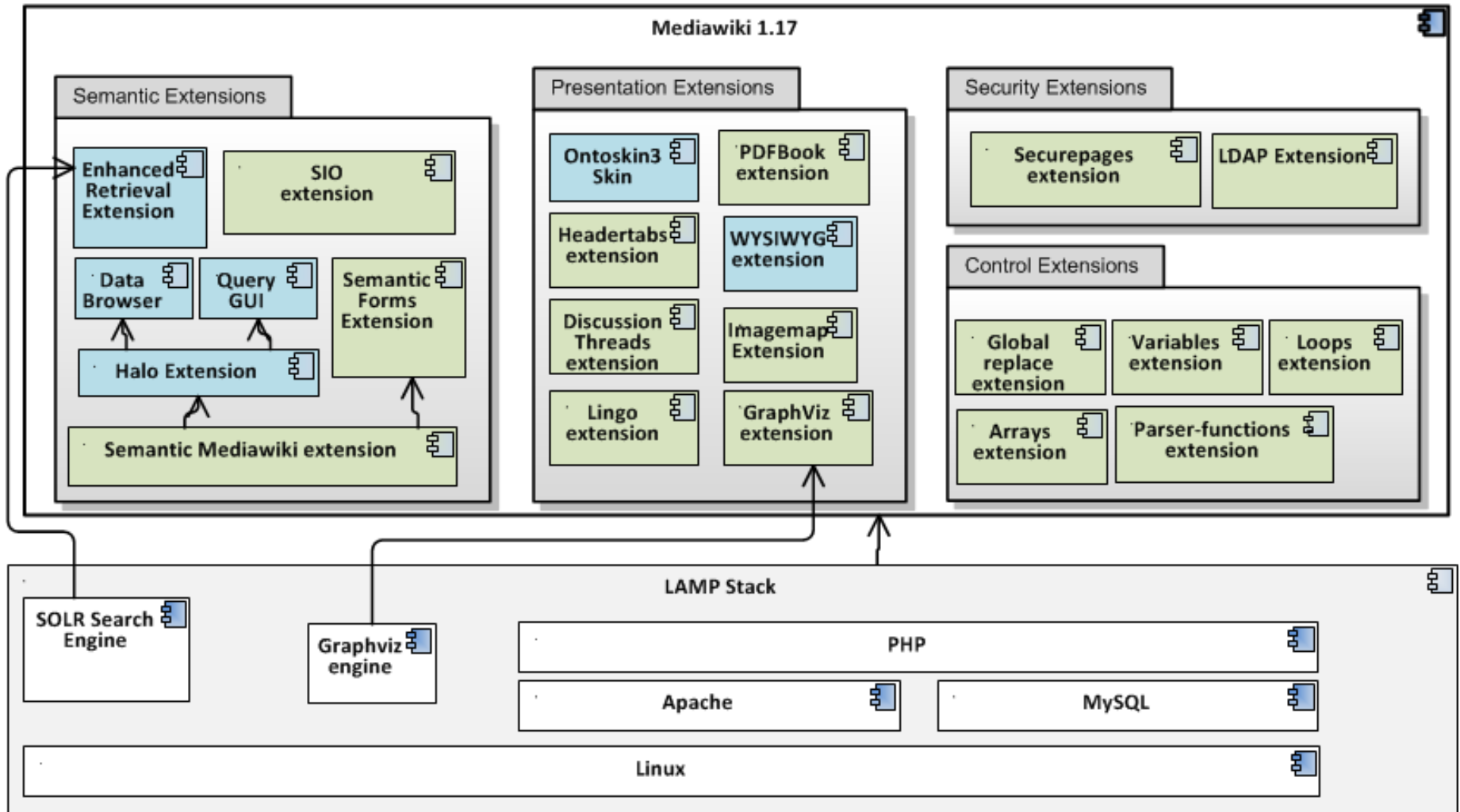
[More](#)

Object Type: Pattern	Graph
Tech Domain	Platform
Status	Work in Progress
Uses ABBs	Cloud Broker , AMI , Amazon Cloud Storage , EBS Storage , S3 Storage , Configuration Management , Application Performance Management , Server Automation , Cloud Broker , Virtualized Images , AMI
Owner	Matt Lipinski
Description	This pattern will be specifically used to define the pattern associated with Amazon.
R/SADDs using this pattern	Cloud Reference Architecture

Key Point: Bi-directional relationships can be managed! (queried, searched, etc.) This is not possible in SharePoint or standard wikis

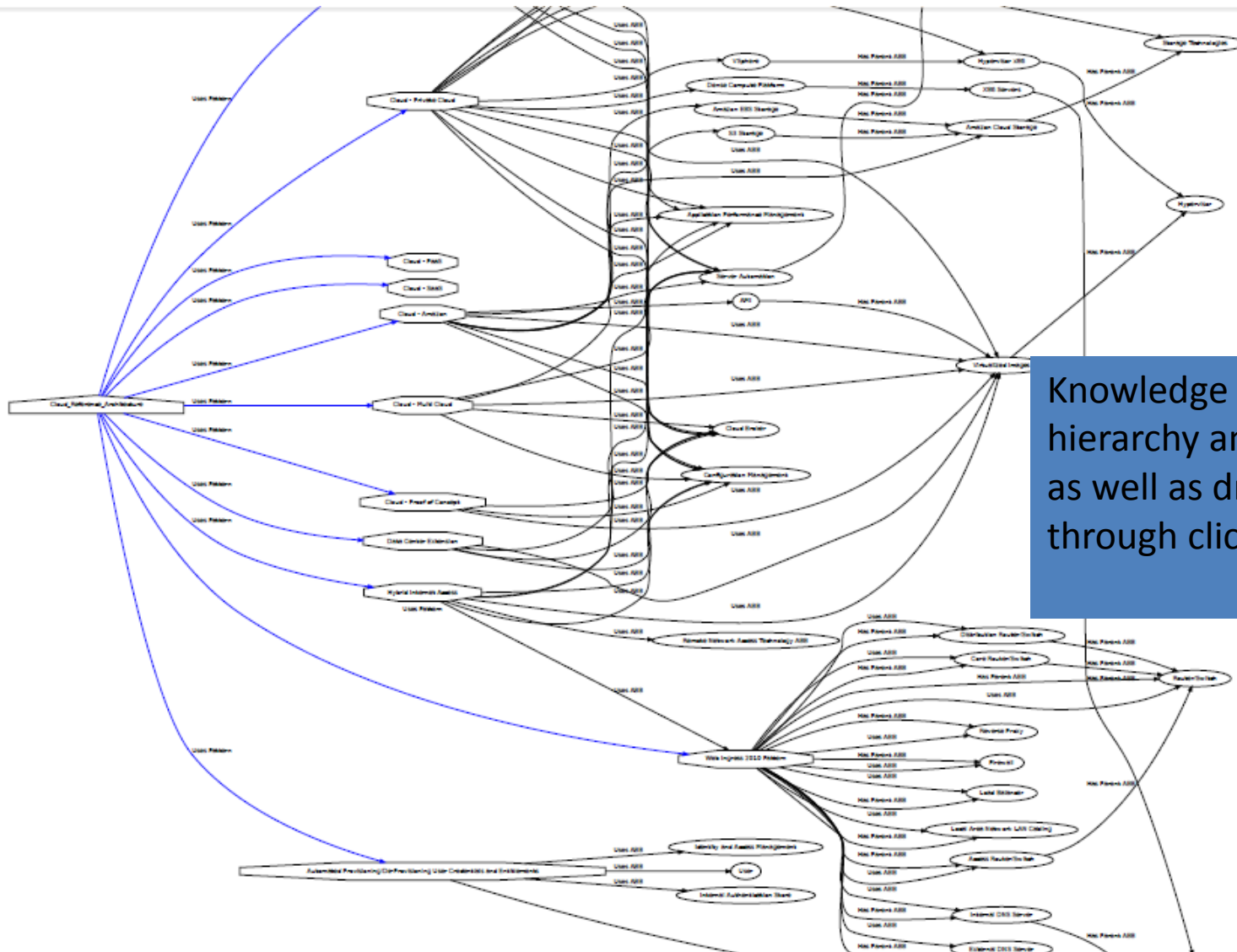


ArchE Platform Overview



Knowledge Graph

Link



Knowledge Graph shows hierarchy among artifacts as well as drill-down through clickable links

Knowledge Graph Internals

Based on **graphviz** engine + graphviz MW extension

Sample graphviz code:

```
...
"Cloud - Multi Cloud" [shape=octagon,style=bold,
URL="/mediawiki/index.php/Cloud_-_Multi_Cloud"];
"Amazon - Proof of Concept" [shape=octagon,style=bold,
URL="/mediawiki/index.php/Amazon_-_Proof_of_Concept"];
"SAAS Two Way Data Exchange" [shape=octagon,style=bold,
URL="/mediawiki/index.php/SAAS_Two_Way_Data_Exchange"];
"Data Center Orchestration" [shape=octagon,style=bold,
URL="/mediawiki/index.php/Data_Center_Orchestration"];
"Cloud Service Designer" [shape=octagon,style=bold,
URL="/mediawiki/index.php/Cloud_Service_Designer"];
"Cloud_Reference_Architecture"-> "Hybrid Cloud Pattern"
[label="Uses Pattern", color=blue];
"Cloud_Reference_Architecture"-> "Internal Private Cloud"
[label="Uses Pattern", color=blue];
"Cloud_Reference_Architecture"-> "External Private Cloud"
[label="Uses Pattern", color=blue];
...
```

Knowledge Graph Internals

Drill down relationships using mediawiki code!

- **#ask** to find related objects and store them in **#arrays**
- **#arrayprint** to iterate through objects
- **Templates** used as subroutines

And, this “drill-down” code is reusable; e.g, it’s used to generate PDFbook documentation

Gaps

Much of the SMW+ Platform has been orphaned

- WYSIWYG editor still buggy, but a key feature
- Faceted Search

Other:

- Doc/visio/jpg repository – limited document and content management capabilities (no round-trip editing)
- Complex, compound documents with graphics, charts, etc

Anyone else facing these enterprise challenges?

Can we collaborate to solve them?